



**NEW ENGLAND
COMMON ASSESSMENT PROGRAM**

**Released Items
2009**

**Grade 8
Mathematics**

Mathematics



Items with this symbol were selected from Session One—no calculators or other mathematics tools allowed.



- 1 Look at this inequality.

$$\boxed{?} > |-15|$$

Which expression makes the inequality true?

- A. $|-16|$
- B. $|-14|$
- C. $-|16|$
- D. $-|14|$

- 2 Look at these numbers.

$$1^{20}, 2^7, 5^3$$

In which set are the numbers ordered from **greatest to least**?

- A. $1^{20}, 2^7, 5^3$
- B. $2^7, 1^{20}, 5^3$
- C. $2^7, 5^3, 1^{20}$
- D. $5^3, 2^7, 1^{20}$

- 3** Which set of measures can be the lengths of the sides of a triangle?

- A. 1 cm, 2 cm, 3 cm
- B. 2 cm, 2 cm, 5 cm
- C. 3 cm, 5 cm, 7 cm
- D. 4 cm, 6 cm, 12 cm

- 4** To make a poster, Jeff will enlarge the length and width of a photograph by a scale factor of 5. The photograph is 8 inches wide and 10 inches long. What will be the **area** of the **poster**?

- A. 80 square inches
- B. 195 square inches
- C. 400 square inches
- D. 2000 square inches

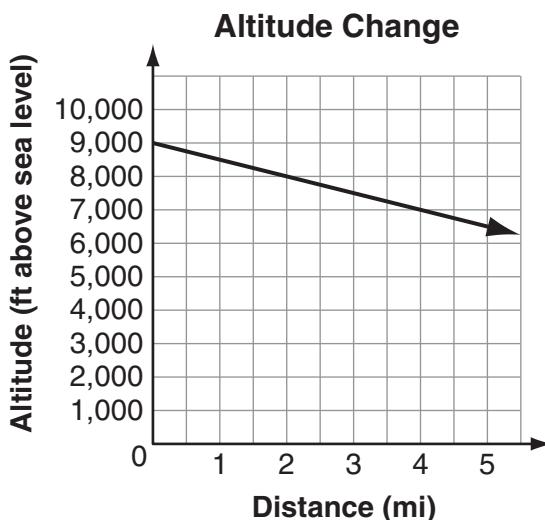
- 5** Look at this pattern.

$$\frac{1}{9}, \frac{1}{3}, 1, 3, ?$$

What number comes next in the pattern?

- A. 5
- B. 6
- C. 9
- D. 12

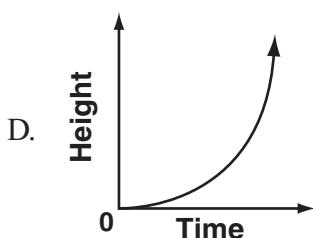
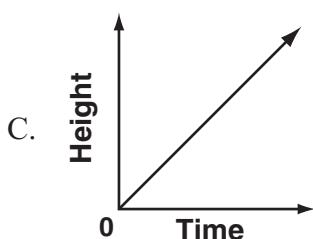
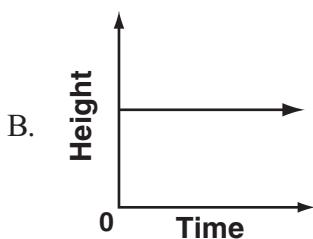
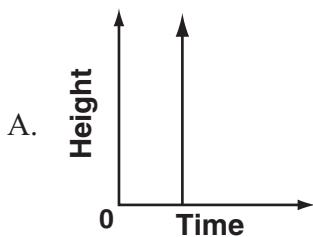
- 6** This graph shows the relationship between the altitude of an airplane and the distance it travels while it is descending.



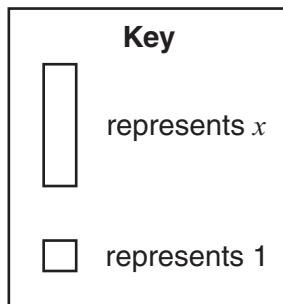
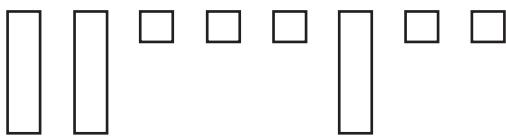
Which statement describes the slope of this line?

- A. The altitude decreases by 500 feet every mile.
- B. The altitude decreases by 1000 feet every mile.
- C. The altitude decreases by 1 foot every 500 miles.
- D. The altitude decreases by 1 foot every 1000 miles.

- 7 A hot-air balloon rises at a **constant** rate. Which graph could show the relationship between the balloon's height above the ground and the amount of time that has passed since it left the ground?



- 8 Look at this model.

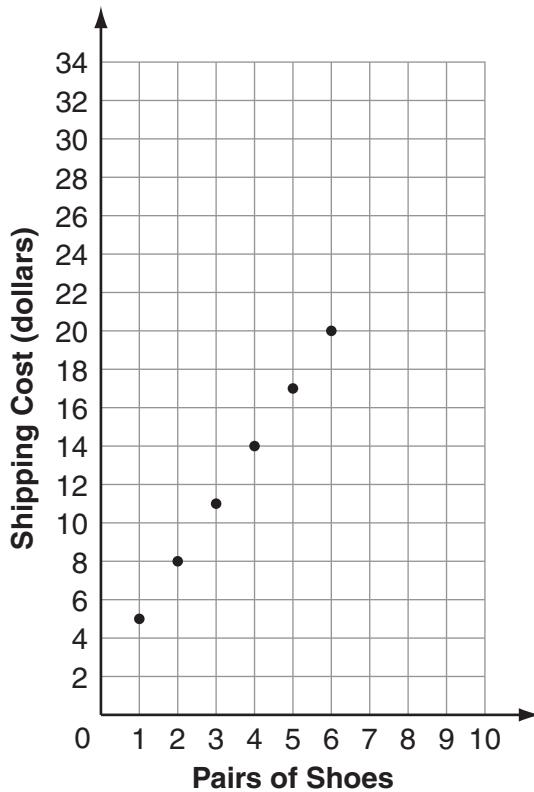


Which expression is shown by the model?

- A. $8x$
B. $x^3 + 5$
C. $3x^5 + x^5$
D. $3x + 5$



- 9 This scatter plot shows the relationship between the shipping costs and the number of pairs of shoes ordered.



Based on this scatter plot, what is the shipping cost for 10 pairs of shoes?

- A. \$34
- B. \$32
- C. \$30
- D. \$28

- 10 The chart below shows the weights and lengths of some fish John caught.

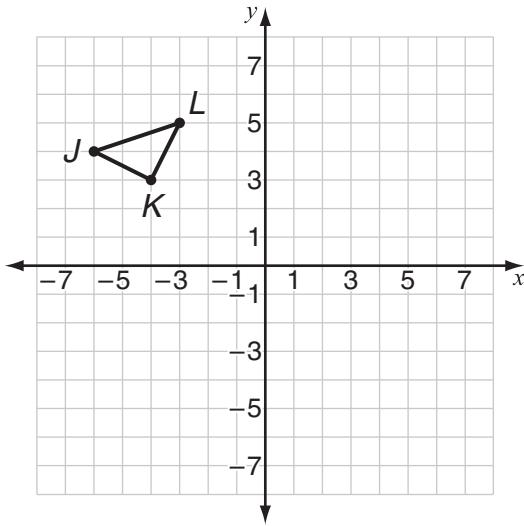
Length (in inches)	Weight (in pounds)
20	3.3
28	7.7
28	8.4
35	15.4
35	16.8
20	3.1
20	2.9
33	10.8
33	22.5
20	5.5

To show a relationship between the fishes' lengths and weights, which type of graph is **best** to display the data?

- A. histogram
- B. circle graph
- C. line plot
- D. scatter plot



- 11 Look at $\triangle JKL$.



After a reflection over the y -axis, the image of $\triangle JKL$ is $\triangle J'K'L'$. What are the coordinates of point K' ?



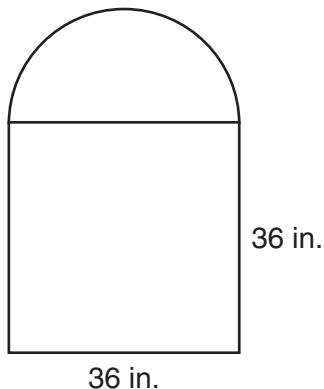
- 12 Steve wants to know what type of music most teenagers prefer. He surveyed 50 teenagers who were attending a jazz concert. Explain why Steve's data may be biased.

- 13** This chart shows the percent of students who are athletes at each of two schools.

School	Percent of Students Who Are Athletes
Edgemont	30%
Bayville	50%

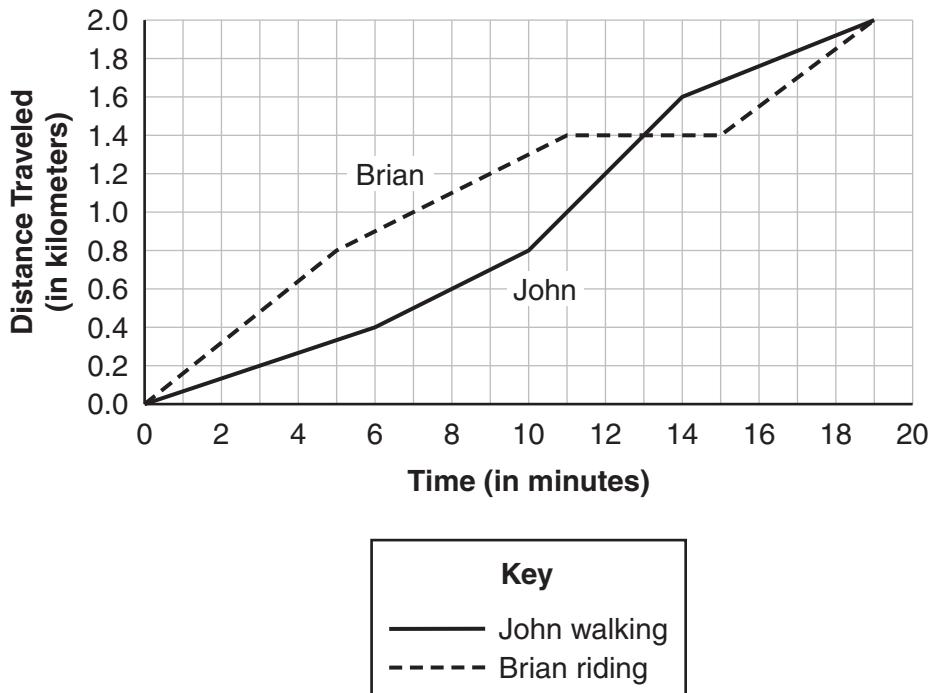
There are 400 students at Edgemont School. Bayville School has fewer athletes than Edgemont School. What is one possibility for the total number of students who go to Bayville School? Show your work or explain how you know.

- 14** The shape of the window shown below is made up of a square and a semicircle.



What is the area of the window to the nearest square inch? Show your work or explain how you know.

- 15 John and Brian each live 2 kilometers from their school. John walks to school and Brian rides his bicycle. These graphs show the distance each boy travels to school.



- How many kilometers does John walk between minutes 3 and 8?
- What is the speed that Brian is riding his bicycle between minutes 11 and 15?
- Between which minutes do John and Brian travel at the same speed? Explain how you know.